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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/566,597 | 06/22/2006 | Yeon Soo Kang | PL131 | 5765 |

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| EXAMINER | |
|---|---|
| SYKES, ALTREV C | |
| ART UNIT | PAPER NUMBER |
| 1794 | |

| NOTIFICATION DATE | DELIVERY MODE |
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| 03/03/2010 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

euspto@slspatents.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/566,597 | KANG ET AL. | |
| | Examiner | Art Unit | |
| | ALTREV C. SYKES | 1794 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-5,7 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 15, 2010 has been entered.

### *Response to Amendment*

2. The amendment to the claims filed January 15, 2010 is acknowledged by examiner and has been entered. Claims 1-5 and 7-8 remain pending prosecution.

### *Response to Arguments*

3. Applicant's arguments filed January 15, 2010 have been fully considered but they are not persuasive.

Applicants argue Miyazawa et al. teach preparing their elastic fiber by treating an acetyl-cellulose-containing fiber with an alkali (See, e.g., paragraph [0045]). Thus, not only is the fiber of Miyazawa et al. not alkali resistant, altering the process steps in Miyazawa et al. to attempt to achieve such a property would render the process inoperable for its intended purpose. A skilled artisan would not have modified Miyazawa *et al.* to attain a

fiber with high alkali resistance since the final fiber could not even be produced by the Miyazawa *et al.* method that includes treating a fiber with an alkali.

Examiner is not persuaded. Examiner notes that applicant is arguing limitations not presently recited in the claims (i.e. alkali resistance). As such, the process of applicant is not required to produce an alkali resistant fiber, and the fiber claimed is not required to exhibit alkali resistance. Therefore, applicant's arguments are deemed moot. Nevertheless, applicant discloses elastic fibers have alkali resistance to some extent due to their inherent characteristics. (See instant specification pg. 2, lines 24-25) Therefore, one of ordinary skill in the art at the time of the invention would have readily expected for the elastic fibers as disclosed by Miyazawa et al. to exhibit alkali resistance to some extent.

Applicant argues the rejection of claim 7 as being anticipated by or, in the alternative, obvious over Watanabe et al. with respect to the newly added claim limitations.

Examiner is not persuaded and maintains the position as set forth in the last mailed office action. Examiner notes that applicant is arguing limitations not presently recited in the claims (i.e. alkali resistance and heat resistance). Further, examiner notes that the newly added process limitations do not further distinguish the claimed invention from the prior art since claim 7 is noted to be a product-by-process claim directed solely to an elastic fiber.

Applicant argues the newly added claim limitations with respect to claims 1-5 as being patentable over the applied prior art references.

Examiner will address the remarks of applicant in the revised rejections as now set forth below.

Regarding the remaining arguments against claim 8, examiner maintains the position as set forth above for claim 7 and in the last mailed office action for claim 8. Specifically, applicant is reminded that if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

***Claim Rejections - 35 USC § 112***

4. In view of the amendment to the claims 1-5 and 7-8 the rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn.

***Claim Rejections - 35 USC § 102/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 7 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miyazawa et al. (JP 2000-303259).

Regarding claim 7, absent a showing to the contrary, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the

present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In the instant case, Miyazawa et al. discloses a process for producing a polyurethane elastic yarn excellent in moisture-absorbing properties and biodegradability without exerting adverse effect on the yarn basic properties of strength, elongation at break, and stress. A urethane prepolymer solution is mixed with the solutions of a chain extender and a chain terminator to effect the reaction between them and a solution of acetyl cellulose in a solvent is added to the reaction mixture at the same time as or after the reactions to prepare a spinning dope. Then the spinning dope is spun into fibers. (See Abstract) Miyazawa et al. discloses that a urethane prepolymer is produced by reacting an organic diisocyanate with a polymer diol. (See [0008]) Miyazawa et al. discloses the organic diisocyanate and diol are mixed first from 30 minutes to 2 hours. (See [0011]) Miyazawa et al. discloses a chain extension agent (diamine) and terminal stopper (monoamine) are next added to the urethane prepolymer and allowed to react for 30 minutes to 90 minutes. (See [0013]) Miyazawa et al. discloses simultaneously with the reaction of the urethane prepolymer, chain extension agent, and terminal stopper, the acetyl cellulose (cellulose acetate) may be added in an amount of 3 to 15%. (See [0015] and [0040]) Therefore, it is noted by examiner that the process of Miyazawa et al. provides for the ripening of the solution since the chain extension agent, terminal stopper, and acetyl cellulose may be added simultaneously and allowed to react for 30 minutes to 90 minutes. (See [0013] and [0015]) Further, examiner notes that applicant discloses the use of the chain extender improves heat resistance of the elastic fiber. (See instant specification pg. 2, lines 20-21)

Therefore, one of ordinary skill in the art at the time of the invention would have readily expected for the fiber as disclosed by Miyazawa et al. to exhibit heat resistance since a chain extension agent was used. Applicant also discloses elastic fibers have alkali resistance to some extent due to their inherent characteristics. (See instant specification pg. 2, lines 24-25) Therefore, one of ordinary skill in the art at the time of the invention would have readily expected for the fibers as disclosed by Miyazawa et al. to exhibit alkali resistance to some extent.

8. Claim 7 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Watanabe et al. (US 4,439,599).

Regarding claim 7, Watanabe et al. discloses polyurethane elastic filaments having excellent elasticity recovery, heat resistance and alkali resistance. (See Col 8, lines 28-31) Absent a showing to the contrary, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art

product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In the instant case, Watanabe et al. discloses a polyurethane prepared by using, as a compound having two active hydrogen atoms in the molecule in producing a polyurethane by reacting an organic diisocyanate with said compound, a polycaprolactone polyester-diol prepared from a dihydric alcohol, a dibasic acid, an ester thereof or an anhydride thereof and ε-caprolactone and/or hydroxycaproic acid and having a hydroxyl value of 35 to 150 KOH mg/g and a content of ε -caprolactone and hydroxycaproic acid of 60 to 95% by weight and having an elastic recovery of at least 50%, preferably at least 70%. (See Col 1, lines 61-68 and Col 2, lines 1-5) Watanabe et al. discloses as the organic diisocyanates used in the production of the polyurethane of this invention there can be mentioned 2,4-tolylene diisocyanate, and 4,4'-diphenylmethane diisocyanate. (See Col 3, lines 15-23) Watanabe et al. discloses as the chain extender, there can be used ethylene glycol, propylene glycol, 1,4-butylene glycol, 2-methyl-1,3-propanediol, neopentyl glycol, pentanediol, 1,6-hexanediol, ethylenediamine, propylenediamine, hydrazine, isophoronediamine, m-phenylenediamine, 4,4'-diaminodiphenylmethane, diaminodiphenyl sulfone and 3,3'-dichloro-4,4'-diaminodiphenylmethane. (See Col 3, lines 25-31) Watanabe et al. discloses as the production process of the polyurethane there can be used any of the following

processes: a prepolymer process in which a diol and an excess of an organic diisocyanate are reacted to produce a prepolymer having isocyanato groups on both terminals and, then the prepolymer is reacted with a chain extender such as a diol or a diamine to produce a polyurethane or a one-shot process in which all of the components are added at once to form a polyurethane. These polyurethane production processes can be carried out in the presence or absence of a solvent. As the solvents there are employed those inert to an isocyanate. For example, there are used ethyl acetate, butyl acetate, and dimethylformamide. (See Col 3, lines 32-46)

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazawa et al. (JP 2000-303259) in view of Brotherton et al. (US 3,256,220).

Regarding claims 1 and 3 Miyazawa et al. discloses a process for producing a polyurethane elastic yarn excellent in moisture-absorbing properties and biodegradability without exerting adverse effect on the yarn basic properties of strength, elongation at break, and stress. A urethane prepolymer solution is mixed with the solutions of a chain extender and a chain terminator to effect the reaction between them and a solution of acetyl cellulose in a solvent is added to the reaction mixture at the same time as or after the reactions to prepare a spinning dope. Then the spinning dope is spun into fibers. (See Abstract) Examiner notes that the acetyl cellulose is disclosed as being in solution form. Miyazawa et al. discloses that a urethane prepolymer is produced by reacting an organic diisocyanate with a polymer diol. (See [0008]) Miyazawa et al. discloses the organic diisocyanate and diol are mixed first from 30 minutes to 2 hours. (See [0011]) Miyazawa et al. discloses a chain extension agent (diamine) and terminal stopper (monoamine) are next added to the urethane prepolymer and allowed to react for 30 minutes to 90 minutes. (See [0013]) Miyazawa et al. discloses simultaneously with the reaction of the urethane prepolymer, chain extension agent, and terminal stopper, the acetyl cellulose (cellulose acetate) may be added in an amount of 3 to 15%. (See [0015] and [0040]) Therefore, it is noted by examiner that the process of Miyazawa et al. provides for the ripening of the solution since the chain extension agent, terminal stopper, and acetyl cellulose may be added simultaneously and allowed to react for 30 minutes to 90 minutes. (See [0013] and [0015]) Further, Miyazawa et al. discloses simultaneously with the reaction which obtains the polyurethane-polymer solution or after this reaction, an acetyl cellulose

solution may be added and mixed uniformly in which the same solvent from the polyurethane-polymer solution may be used. (See [0015]) Miyazawa discloses suitable solvents include N,N-dimethylformamide and dimethyl sulfoxide. (See [0017]) Therefore, examiner notes that a case of prima facie obviousness exists for modifying the process steps to provide the mixture of a polyurethane-polymer solution and an acetyl cellulose solution. Further, Miyazawa et al. discloses in one embodiment, the acetyl-cellulose solution was added in the polyurethane solution so that the added acetyl cellulose might serve as 1, 3, 5, 10 and an appending rate of 15 or 20% to total solids is obtained. (See [0034]) As such, examiner notes that one of ordinary skill in the art at the time of the invention would have been easily motivated to modify the addition mixing as taught by Miyazawa et al. in order to arrive at applicant's claimed invention motivated by the desire to control the viscosity of the mixed solution. Miyazawa et al. discloses all of the claim limitations as set forth above, but the reference doesn't specifically disclose wherein after the addition of the cellulose acetate, the spinning solution is ripened by allowing it to stand at 30°C to 70°C for 28 to 38 hours.

Brotherton et al. discloses the preparation of elastic fibers from the reaction of various polyisocyanate compounds with active hydrogen compounds. (See Col 1, lines 19-28 and Col 18, lines 22-24) Brotherton et al. discloses the fibers are characterized by outstanding resistance to sunlight degradation, and high resistance to fume aging, i.e., resistance to breakdown caused by nitrous oxide which is commonly found as an impurity in the atmosphere. (See Col 18,, lines 29-36) Brotherton et al. discloses the

fibers are prepared by first reacting a linear hydroxyl-terminated polymer with a diisocyanate to produce a prepolymer. (See Col 18, lines 37-42) Brotherton et al. discloses the prepolymer reaction time likewise is largely influenced by the correlation of the variable involved, and can vary from a few minutes to several hours. (See Col 20, lines 22-25) Brotherton et al. discloses the chain extension reaction of said prepolymer with a bifunctional curing compound is well known for spinning techniques resulting in elastic fibers. (See Col 18, lines 42-46) Brotherton et al. discloses the linear hydroxyl-terminate polymers include alkylene and polyether glycols. (See Col 18, lines 67-70) Brotherton et al. discloses the bifunctional during compound may be a diamine such as ethylenediamine or hydrazine. (See Col 20, lines 41-48) A preferred diol to be added is ethanolamine. (See Col 20, lines 69-72) Brotherton et al. discloses the prepolymer is dissolved in a solvent such as dimethylsulfoxide. (See Col 21, lines 33-35) Brotherton et al. discloses the bifunctional curing compound is then added. The cure to prepare the fibers can be varied in duration to obtain the desire and optimum properties in the final fiber thereby producing fibers which may range from semi-elastic to highly elastic. (See Col 21, lines 66-72 and Col 22, lines 32-33) Examiner therefore equates the cure process to the ripening process of applicant. Brotherton et al. discloses the polyisocyanates can be used to modify cellulose and cellulose derivatives in textile materials. (See Col 28, lines 11-22 and 61-63) Brotherton et al. discloses after the addition of diacetate the reaction temperature was maintained at about 65°C by external cooling until the reaction subsided and then allowed to stand for one hour. (See Example 29) Therefore it is noted that allowing a solution to stand (i.e. ripen) after the addition of a cellulose acetate

compound in the production of polyurethane compositions for elastic fibers is known in the art.

As Miyazawa et al. and Brotherton et al. are both directed to methods for producing elastic fibers, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the reaction times and temperatures as taught by Brotherton et al. in the method as disclosed by Miyazawa et al. motivated by the desire to tailor the fibers for end product use by using known steps that would produce fibers which may range from semi-elastic to highly elastic. (See Col 22, lines 32-33)

Modified Miyazawa et al. fails to specifically teach the spinning solution is ripened by allowing it to stand for 28 to 38 hours. The references are also silent as to stirring the cellulose acetate solution for 7-8 hours before adding to the polyurethane-polymer solution. Finally, modified Miyazawa does not specifically disclose the homogeneous stirring time of the mixture is increased by 30 minutes for each increase of 1% by weight of the cellulose acetate present in the mixture. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the stirring time, stirring increments, and ripen time since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that

the claimed ripen time is critical and has unexpected results. In the present invention, one would have been motivated to optimize the ripen time motivated by the desire to tailor the elasticity of the final fibers. (See Col 22, lines 32-33) Brotherton et al. discloses the cure to prepare the fibers can be varied in duration to obtain the desire and optimum properties in the final fiber thereby producing fibers which may range from semi-elastic to highly elastic. (See Col 21, lines 66-72) One would have been motivated to optimize the stirring time and stirring increments motivated by the desire to control the viscosity of the spinning solution. (See Miyazawa [0015] and [0034])

Regarding claim 2, Miyazawa et al. discloses it is preferred that the acetyl cellulose be diacetyl cellulose thru/or triacetyl cellulose of 30 to 62.5% of an acetylation degree. (See [0016])

Regarding claim 4, Miyazawa et al. discloses polycarbonatediol as a preferred polyol. (See [0009]) Miyazawa et al. discloses the diisocyanate may be 4,4'-diphenylmethane diisocyanate or a tolylene diisocyanate. (See [0011]) It is noted by examiner that tolylene diisocyanate is a toluene derivative and would therefore provide for the same properties as the toluenediisocyanate as claimed by applicant. Miyazawa further discloses the chain extension agent may be ethylenediamine. (See [0014]) Miyazawa discloses using a terminal stopper such as dimethylamine. (See [0014]) Finally, Miyazawa discloses a solvent such as dimethylacetamide, dimethylformamide, and dimethylsulfoxide. (See [0017])

Regarding claim 5, Miyazawa et al. discloses an ultraviolet ray absorbent, gas antitarnish agent, and color may be added to the polyurethane. (See [0018]) Examiner equates an ultraviolet ray absorbent to the UV stabilizer and equates a gas antitarnish agent to a gas anti-yellowing agent as claimed by applicant.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mares et al. (US 5,531,998) in view of Miyazawa et al. (JP 2000-303259).

Regarding claim 8, Mares et al. discloses block copolymers particularly suited to be spun into fibers. (See Col 1, lines 10-20) Mares et al. discloses the B-block or blocks are formed of one or more recurring units derived from monomers such as diols, polyols, and the like. (See Col 3, lines 31-36) Mares et al. discloses in addition, for certain applications, end-capping of the block copolymers may be desired. End-capping may be accomplished by conventional means, as for example, acetylation. (See Col 11, lines 50-57) Mares et al. discloses other polymeric components such as fibers, fillers and binders may be combined with the copolymers prior to and during the formation of fibers or devices, or subsequent to their formation such as polyurethanes; segmented polyurethanes; polyetherurethanes; polyurethane ureas, cellulose such as, cellulose acetate. (See Col 13, lines 49-52 and 65-67 and Col 14, lines 4-6) Mares et al. discloses other components besides polymeric components may be combined with the polymers during or before they are formed into the fibers of the invention, or added to, coated onto

and the like, after their formation. These components include substances that will enhance certain of the desired properties of fibers made from the polymers. Among the contemplated classes of such substances are antioxidants, and stabilizers of all kinds such as stabilizers for UV radiation. (See Col 14, lines 18-27) Mares et al. discloses the modulus of the fibers may vary widely depending on the use. Fiber of different or the same polymeric compositions and physical and mechanical properties but differing in denier can be obtained and used or fabricated into fabric that is woven, knitted, velvet, velour, mesh or braided. Velveted material is particularly suited for use in small caliber blood vessel replacements. (See Col 16, lines 25-26 and 40-42) Devices made from the block copolymers are especially useful with regard to their biodegradability or bioresorption properties. (See Col 1, lines 10-20) While Mares et al. discloses all of the claim limitations as set forth above, the reference is not explicit as to a particular preferred elastic fiber as claimed by applicant.

Miyazawa et al. discloses a polyurethane elastic yarn excellent in moisture-absorbing properties and biodegradability without exerting adverse effect on the yarn basic properties of strength, elongation at break, and stress. A urethane prepolymer solution is mixed with the solutions of a chain extender and a chain terminator to effect the reaction between them and a solution of acetyl cellulose in a solvent is added to the reaction mixture at the same time as or after the reactions to prepare a spinning dope. Then the spinning dope is spun into fibers. (See Abstract) Miyazawa et al. discloses that a urethane prepolymer is produced by reacting an organic diisocyanate with a polymer diol.

(See [0008]) Miyazawa et al. discloses the organic diisocyanate and diol are mixed first from 30 minutes to 2 hours. (See [0011]) Miyazawa et al. discloses a chain extension agent (diamine) and terminal stopper (monoamine) are next added to the urethane prepolymer and allowed to react for 30 minutes to 90 minutes. (See [0013]) Miyazawa et al. discloses simultaneously with the reaction of the urethane prepolymer, chain extension agent, and terminal stopper, the acetyl cellulose (cellulose acetate) may be added in an amount of 3 to 15%. (See [0015] and [0040]) Therefore, it is noted by examiner that the process of Miyazawa et al. provides for the ripening of the solution since the chain extension agent, terminal stopper, and acetyl cellulose may be added simultaneously and allowed to react for 30 minutes to 90 minutes. (See [0013] and [0015])

As Mares et al. and Miyazawa et al. are both directed to fibers having the property of biodegradability, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention motivated by expected success to utilize the specific elastic polyurethane fiber as taught by Miyazawa et al. to provide a velvet fabric as disclosed by Mares et al. since the reference discloses a substantially similar composition for producing fibers having biodegradability. One of ordinary skill in the art would have been easily motivated to utilize the teaching of Miyazawa for the devices as disclosed by Mares et al. since Mares et al. discloses that the fiber properties can be easily tailored for end product use (i.e. by modifying the modulus and adding stabilizers). (See Col 16, lines 25-26 and 40-42 and Col 14, lines 18-27)

Examiner notes that claim 8 is a product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is obvious over a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mares et al. (US 5,531,998) in view of Watanabe et al. (US 4,439,599).

Regarding claim 8, Mares et al. discloses block copolymers particularly suited to be spun into fibers. (See Col 1, lines 10-20) Mares et al. discloses the B-block or blocks are formed of one or more recurring units derived from monomers such as diols, polyols, and the like. (See Col 3, lines 31-36) Mares et al. discloses in addition, for certain applications, end-capping of the block copolymers may be desired. End-capping may be

accomplished by conventional means, as for example, acetylation. (See Col 11, lines 50-57) Mares et al. discloses other polymeric components such as fibers, fillers and binders may be combined with the copolymers prior to and during the formation of fibers or devices, or subsequent to their formation such as polyurethanes; segmented polyurethanes; polyetherurethanes; polyurethane ureas, cellulose such as, cellulose acetate. (See Col 13, lines 49-52 and 65-67 and Col 14, lines 4-6) Mares et al. discloses other components besides polymeric components may be combined with the polymers during or before they are formed into the fibers of the invention, or added to, coated onto and the like, after their formation. These components include substances that will enhance certain of the desired properties of fibers made from the polymers. Among the contemplated classes of such substances are antioxidants, and stabilizers of all kinds such as stabilizers for UV radiation. (See Col 14, lines 18-27) Mares et al. discloses the modulus of the fibers may vary widely depending on the use. Fiber of different or the same polymeric compositions and physical and mechanical properties but differing in denier can be obtained and used or fabricated into fabric that is woven, knitted, velvet, velour, mesh or braided. Velveted material is particularly suited for use in small caliber blood vessel replacements. (See Col 16, lines 25-26 and 40-42) Devices made from the block copolymers are especially useful with regard to their biodegradability or bioresorption properties. (See Col 1, lines 10-20) Mares discloses other devices not necessary for implantation purposes can also be envisaged, e.g., cell culture substrates, absorbents or swabs, medicated dressings, gauzes, fabrics, sheets, felts or sponges for hemostasis, dental packs and the like. (See Col 15, lines 7-11) While Mares et al.

discloses all of the claim limitations as set forth above, the reference is not explicit as to a particular preferred elastic fiber as claimed by applicant.

Watanabe et al. discloses polyurethane elastic filaments having excellent elasticity recovery, heat resistance and alkali resistance. (See Col 8, lines 28-31) Watanabe et al. discloses a polyurethane prepared by using, as a compound having two active hydrogen atoms in the molecule in producing a polyurethane by reacting an organic diisocyanate with said compound, a polycaprolactone polyester-diol prepared from a dihydric alcohol, a dibasic acid, an ester thereof or an anhydride thereof and ε-caprolactone and/or hydroxycaproic acid and having a hydroxyl value of 35 to 150 KOH mg/g and a content of ε -caprolactone and hydroxycaproic acid of 60 to 95% by weight and having an elastic recovery of at least 50%, preferably at least 70%. (See Col 1, lines 61-68 and Col 2, lines 1-5) Watanabe et al. discloses as the organic diisocyanates used in the production of the polyurethane of this invention there can be mentioned 2,4-tolylene diisocyanate, and 4,4'-diphenylmethane diisocyanate. (See Col 3, lines 15-23) Watanabe et al. discloses as the chain extender, there can be used ethylene glycol, propylene glycol, 1,4-butylene glycol, 2-methyl-1,3-propanediol, neopentyl glycol, pentanediol, 1,6-hexanediol, ethylenediamine, propylenediamine, hydrazine, isophoronediamine, m-phenylenediamine, 4,4'-diaminodiphenylmethane, diaminodiphenyl sulfone and 3,3'-dichloro-4,4'-diaminodiphenylmethane. (See Col 3, lines 25-31) Watanabe et al. discloses as the production process of the polyurethane there can be used any of the following processes: a prepolymer process in which a diol and an excess of an organic diisocyanate

are reacted to produce a prepolymer having isocyanato groups on both terminals and, then the prepolymer is reacted with a chain extender such as a diol or a diamine to produce a polyurethane or a one-shot process in which all of the components are added at once to form a polyurethane. These polyurethane production processes can be carried out in the presence or absence of a solvent. As the solvents there are employed those inert to an isocyanate. For example, there are used ethyl acetate, butyl acetate, and dimethylformamide. (See Col 3, lines 32-46) Watanabe et al. discloses the filament can be made into a fabric by itself or in combination with other fabrics. Female garments such as stockings, brassieres, shorts and foundations and industrial elastic fabrics can also be made. (See Col 4, lines 30-34)

As Mares et al. and Watanabe et al. are both directed to fibers comprising polyurethane components, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the elastic fibers as taught by Watanabe et al. in the fabrics as disclosed by Mares et al. since Mares et al. discloses that the fibers are useful in the formation of a variety of devices including fabrics, sheets, and felts. (See Col 15, lines 7-11) Therefore, one of ordinary skill in the art at the time of the invention would have been further motivated by end product use since both references acknowledge a wide use of the fibers produced.

Examiner notes that claim 8 is a product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is

based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is obvious over a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

/ACS/
Examiner
2/16/10